

CASE STUDY



The Office of Civilian Radioactive Waste Management (OCRWM), with Bechtel SAIC Co., identifies Wheelift as a viable transportation solution for sub-terrain disposal of spent nuclear fuel & radioactive waste.

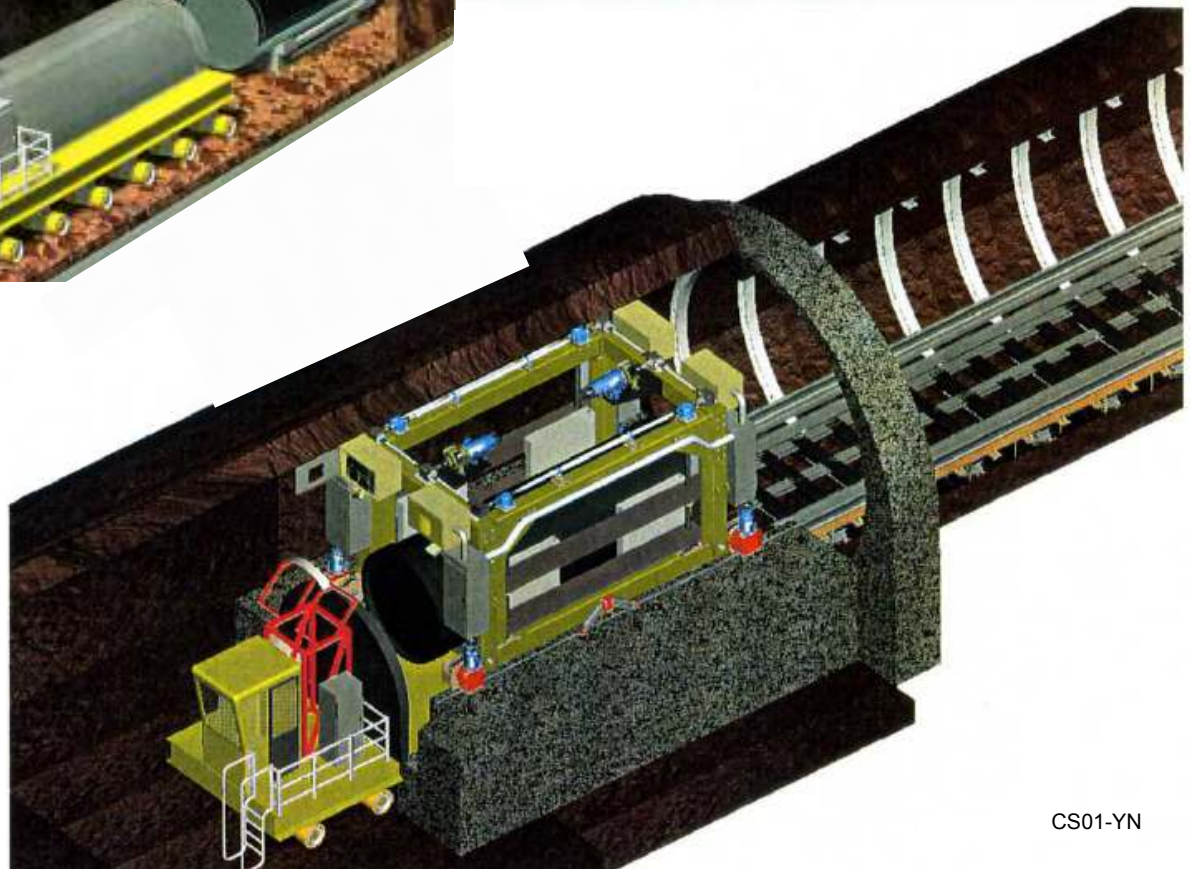


Challenge: Provide an underground transporter system requiring no rails, steel guides, etc. to be left in place, which will be subject to 10,000+ years of various unknown disintegration processes.

Solution: Shielded, radioactive hardened, 100% backup, electric powered heavy capacity Wheelift Transporter fleet.

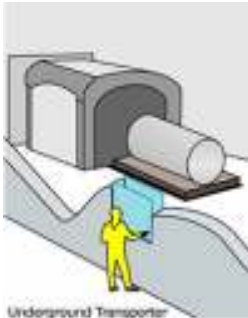
Benefit:

- Eliminates risk - no remaining infrastructure left in place
- Allows multiple put-aways to happen simultaneously shortening the fill process
- Accommodates right angle tunnel designs providing built in protection from gamma radiation "shine" from entombed packages.
- Significant reduction in capital outlay over a fixed rail design



Wheelift

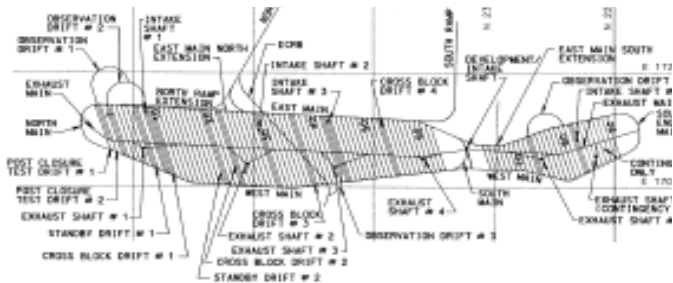
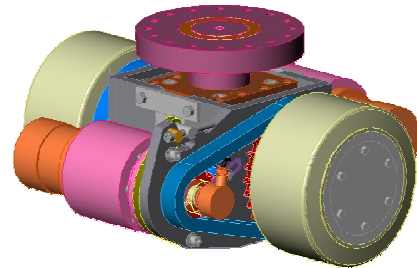
A Doerfer Companies' Technology



An electric Wheelift Transporter will move each loaded Waste Package down through the repository's main access tunnel to an emplacement tunnel. Once the Transporter arrives at the pre-assigned emplacement tunnel and the tunnel's isolation doors are opened, the

shielded doors will next be opened and a retractable deck will move the waste package from the transporter. A gantry will lift the waste package off the deck and deposit it in its designated position inside the tunnel. Before the repository is permanently closed, the overlapping and interlocking drip shields will be placed over the waste packages.

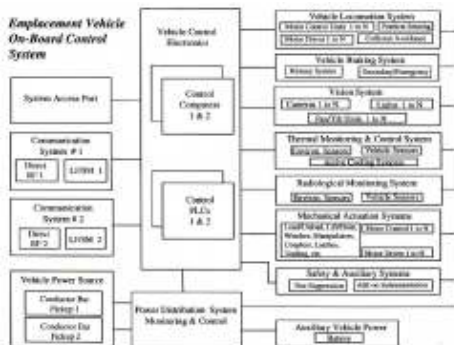
The Transporters chassis is a "U" shape design allowing straddle pickup of the Waste Package. The on-center rotation axle assemblies with their 3-point fluid equalizing suspension have interconnecting fluid lines that divide them into load sharing groups to assure that every wheel carries only its specific share of the load, regardless of variations, slopes, and irregularities in the tunnel surfaces.



The Wheelift Module provides capacity along with a degree of flexibility not obtainable through other technologies. Worldwide niche markets drive manufacturing flexibility for product customization and configurable work processes. Wheelift Transporters and AGVs facilitate this requirement.

Approximately 100-miles of tunnels will hold 70,000 metric tons of waste. The gross vehicle weight for each Transporter is 300 ton, with 120 ton allocated to the Waste Package shielding. Maximum grade seen throughout the system is 2.61%.

Manufactured in Iowa, **Wheelift** Transporters and AGVs are custom developed to each application including close positioning die loading, roll transfers, assembly, and general material handling. Load deck and fixturing is built to suit with load capacities to 500+ tons and deck heights as low as 18". Power options include LP gas, diesel, battery, or on-board generator. Electric or hydraulic drives are standard. For more information on our Wheelift Transporter and inertial/wire guidance AGV systems, please visit us at www.wheelift.com



Power and communications will be provided by an overhead centenary trolley at a nominal 600 volts, in addition to an onboard auxiliary power source.

Headquartered in Iowa, **Doerfer** develops application specific, custom manufacturing systems and machinery - many which revolutionize the way our customers manufacture, assemble, move, package, and test their products. We thrive on your toughest process challenges for manufacturing. For more information on our capabilities, please visit us at www.doerfer.com

